Global Ocean Circulation Revealed From TOPEX/ POSEIDON

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On August 10, 1992, the United States and France launched their joint TOPEX/POSEIDON satellite for making altimetric observations of the sea surface for studying the global ocean circulation. The spacecraft is operating in an orbit which repeats its underlying ground-track every 10 days. Results to date show that the mission is producing observations of the global sea surface elevation with an accuracy better than 5 cm everywhere. This precise knowledge of the shape of the sea surface is directly related to the dynamical processes governing ocean currents throughout the entire water column and provides oceanographers with the first truly global observation system. Designed for a lifetime of 3-5 years, the satellite is providing a database to describe and understand the dynamics of ocean circulation and its time variability with an accuracy and sampling adequate to understand its climatic consequences. An overview of the science results to date will be presented, including the ocean general circulation, the seasonal and interannual variabilities of the ocean, the ocean's response to atmospheric forcing, planetary waves, and global mean sea level variations. Comparisons with the state-of-the-art ocean circulation models will be presented. The potential impact of precision altimetry on future global change studies will be discussed.

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4. U

5. Hidden Earth Revealed From Space

6. Oral

7 None

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